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EXAMINER	
CRAIG, DWIN M	

ART UNIT	PAPER NUMBER
2123	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/812,306	KUBISCHTA ET AL.	
	Examiner	Art Unit	
	Dwin M. Craig	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-22 have been presented for reconsideration based on Applicants' amended claim language and arguments.

Response to Arguments

2. Applicants' arguments presented in the 7/6/2007 responses have been fully considered; the Examiner's response is as follows:

2.1 Regarding the Applicants' response to the 35 U.S.C. 101 rejections of claims 17-22, Applicants' have argued that by amending claim 17 by adding the term *"physical"* to the claim language they have excluded the disclosed *carrier wave* from the possible embodiments as disclosed on pages 9 & 10 of the specification, while Applicants' have excluded the carrier wave itself, it is noted that the following language in the specification discloses using the *wires* of a computer network as the claimed computer readable medium;

> Concrete examples of the foregoing include distribution of executable software program(s) of the computer program on a CD-ROM or via Internet download. In a sense, the Internet itself, as an abstract entity, is a computer readable medium. The same is true of computer networks in general.

Applicants' have set forth that the computer readable media could be the Internet itself, which consists of wires upon which a carrier wave travels, while this is a *physical medium* the wires of any network are not acceptable as computer readable medium under the current guidelines. Applicants' arguments in view of the amended claim language have been unpersuasive and the previously applied 35 U.S.C. 101 rejections of claims 17-22 will be maintained.

2.2 Regarding the Applicants' response to the 35 U.S.C. 103(a) rejections of claims 1-22, on page 7 of the 7/6/2007 responses Applicants' argued:

> Similarly the presence of the phrase "non real-time" in the same paragraph as "clock" does not mean that the clock is being provided to a non-real time simulator. In fact, quite the opposite is true in James:
>
> When operating in the real-time mode, it accepts clock source input 16 and user command input 18; in non-real-time mode, it accepts user command input 18 only.
>
> James at col. 4, lns. 15-17 (emphasis added). This sentence shows that the "accepts a clock" language (which the Office Action equates with a continuous clock) feeds the real-time mode, but the "non-real time mode" (which the Office Action equates with a non-real time simulator) *doesn't receive any clock signal at all.* James therefore does not teach any provision of a continuous clock to a non-real time simulator as alleged in ¶ 3.1 of the Office Action.

The Examiner respectfully traverses Applicants' arguments, while *James* does teach that while the simulator is in non-real-time mode it accepts only a user command input, it fails to teach that this is the only type of input that can be accepted into the simulation while it runs in non-real time mode. *Bennington et al.* clearly teaches the well know in the art method of providing real-time clocks to simulation systems, therefore, an artisan of ordinary skill *could* have experimented with alternative inputs to the simulator of *James* and provided the real-time clock into the simulator when running in non-real-time mode. See, *KSR International Co. v. Teleflex Inc.,* 550 U.S. --, 82 USPQ2d 1385 (2007) where the court cited that market pressure and knowledge of an artisan of ordinary skill are important factors when determining if it is proper to combine two teachings.

On page 8 of the 7/6/2007 responses, Applicants' further argued:

> The additional citation of Bennington for teachings of a real time clock does not provide what is lacking from James. James expressly teaches that its non-real mode does not receive any clock signal as input. It does not matter if it is a non-real time clock or Bennington's real time clock, as James' non-real time mode (the alleged real time simulator) simply doesn't except it as an input.

The Examiner respectfully traverses Applicants' arguments, *Benninton et al.* clearly teaches the use of a real-time simulation clock and the combination of using a real-time simulation clock in a non-real-time would be advantageous in order to ensure that modeled elements, that do not require to be simulated in real-time, will still be able to provide simulation results to the real-time portions of the simulator. The suggestion for providing the real-time clock to the non-real-time simulator is provided in *James* Col. 2 lines 56-67 and Col. 3 lines 1-6 more specifically, "...The tool permits development of a simulation model in a uniprocessor non-real-time desktop workstation and then the migration of that model to a large multiprocessing real-time simulation system without significant changes to the implementation of that model...". AT the time of the *James* reference communications between single processing systems and multiprocessing systems was crude, at the time of Applicants' invention it would have been obvious to an artisan of ordinary skill to have taken the real-time simulation clock and provided this clock, along with any translation required for the non-real-time simulation model in an automated manner, instead of the manual method as disclosed in *James*.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 17-22 are rejected because the claimed computer readable storage medium could be interpreted to be a wire on a computer network, see pages (9 & 10) of the specification, more specifically;

Concrete examples of the foregoing include distribution of executable software program(s) of the computer program on a CD-ROM or via Internet download. In a sense, the Internet itself, as an abstract entity, is a computer readable medium. The same is true of computer networks in general.

It is unclear to the examiner if the Applicants' are claiming a wire on a computer network as the disclosed computer readable medium, which would then be considered non-statutory subject matter under the 35 U.S.C. 101 guidelines as disclosed in the August 2006 MPEP section 2106.01 and current PTO practice.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent 5,701,439 to James in view of U.S. Patent 4,918,652 to Bennington.

4.1 Regarding independent claims 1 and 17 and using independent claim 1 as an example, James teaches, *a method of real-time simulation,* (Col. 1 lines 53-61 more specifically "...real-time simulation system...") *the method comprising: providing a continuous clock* (Col. 4 lines 6-8 more specifically "...continuous model cycle times" and regarding the clock see Col. 4 lines 11-33 more specifically "...it accepts clock source input...") *to a non real-time simulator;* (Col. 4 line 18 "...in non-real-time mode...") *synchronizing a simulation clock of the non real-time simulator with the continuous clock on a continuous basis* (Col. 4 lines 5-10 more specifically, "...continuous model cycle times..." see also Col. 7 lines 1-30 see also Col. 2 lines 51-55) *and advancing the non real-time simulator to a first time based on the simulation clock reaching the first time* (Col. 7 lines 1-30).

However, James lacks or does not does not expressly disclose a *real-time clock.*

Bennington teaches *a real-time clock* (Title "REAL-TIME SIMULATION CLOCK" and Figure 1 Item # 10 and Col. 1 lines 59-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the real-time simulation clock of Bennington in the Discrete-Event and Continuous Model Simulation system of James since the Examiner takes Official Notice. An artisan of ordinary skill in the Real-time simulation art would use the real-time clock of

Bennington in the simulation system of James because the use of a Real-Time simulation clock would facilitate the synchronization of up to six totally independent simulations (see Col. 6 lines 10-25) which would facilitate the use of mixed language simulators as disclosed in James see (Col. 2 lines 65-68).

4.2 Regarding claims 2 and 18, James teaches *advancing the non real-time simulator to a second time based on the simulation clock reaching the second time* (Col. 3 lines 65-67).

4.3 Regarding claim 3 and 19, James teaches *receiving an event for the non real-time simulator at a second time on the continuous real time clock; and advancing the non real-time simulator to a time on the simulation clock equivalent to the second time on the continuous real time clock* (Figure 1 item # 10 and Col. 4 lines 34-57).

4.4 Regarding claims 4 and 20, James teaches, *submitting the event to the non real-time simulator for simulation at the time on the simulation clock* (Figure(s) 3 & 5 and Col. 2 lines 51-55).

4.5 Regarding claims 5 and 21, James teaches, *instantiating a call-back function for the event* (Col. 7 lines 45-51 more specifically, "...user supplied event handler" the event handler will provide a call-back capability).

4.6 Regarding claims 6 and 22, James teaches, *initiating the call-back function in response to the event satisfying a predefined role in the non real-time simulator* (Figure 5 and Col. 7 lines 45-51 more specifically, "...user supplied event handler" the event handler will provide a call-back capability).

5. Claims 7-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent 5,701,439 to James in view of U.S. Patent 5,764,953 to Collins.

5.1 Regarding independent claim 7, James teaches, *an apparatus for real-time simulation* (Col. 1 lines 53-61 more specifically "...real-time simulation system..."), *the apparatus comprising: a non-real time simulator;* (Col. 4 line 18 "...in non-real-time mode...") *and a module configured to interface with the non real-time simulator and provide real-time simulation,* (Figure 1 item # 12 and the descriptive text) *wherein the module is further configured to provide a continuous clock* (Col. 4 lines 6-8 more specifically "...continuous model cycle times" and regarding the clock see Col. 4 lines 11-33 more specifically "...it accepts clock source input...") *to the non real-time simulator to drive a simulation clock of the non real-time simulator* (Col. 4 lines 11-33 more specifically "...it accepts clock source input...") *and to advance the non real-time simulator to a first time on the simulation clock based on the continuous clock reaching the first time* (Col. 7 lines 1-30).

However, James lacks or does not does not expressly disclose a *real-time clock and a controller module.*

Collins teaches a simulation control module (Figure 1 item # 22 and Col. 6 lines 7-19) for controlling a Simulation Clock # 24 and a Real-time clock #26 and a Real-time clock (Col. 4 lines 10-15).

James and Collins are analogous art because they are both from the same field of endeavor of Real-Time simulation systems.

At the time of the invention, it would have been obvious to a person of ordinary skill to use the Real-time simulation methods of James in combination with the Real-time simulation methods of Collins.

The motivation for doing so would have been to provide for a valuable simulation tool that reduces the cost of building simulation models and improve system efficiency by improved simulation and modeling of system operation, see Col. 2 lines 11-33 to Collins.

Therefore it would have been obvious to combine Collins with James to obtain the invention as specified in claims 7-14 and 16.

5.2 Regarding claim 8, James teaches, *wherein the controller module is further configured to advance the non real-time simulator to a second time on the simulation clock based on the continuous real time clock reaching the second time* (Col. 3 lines 65-67).

5.3 Regarding claim 9, James teaches, *wherein the controller module is further configured to receive an event for the non real-time simulator at an event time on the continuous real-time clock* (Figure 1 item # 10 and Col. 4 lines 34-57).

5.4 Regarding claim 10, James teaches, *wherein the controller module is further configured to map the event time to a simulation event time and to advance the non real-time simulator to the simulation event time* (Figure(s) 3 & 5 and Col. 2 lines 51-55).

5.5 Regarding claim 11, James does not expressly teach, however Collins teaches, *wherein the controller module is further configured to forward the event to the non real-time simulator* (Figures 3-7 and the descriptive text).

5.6 Regarding claim 12, James does not expressly teach, however Collins teaches, *a configuration entity configured to provide configuration to the controller module* (Figure 1 and Col. 6 lines 7-19).

5.7 Regarding claim 13, James does not expressly teach however Collins teaches, *wherein the configuration entity is a scenario generator* (Figure 3 Item # 118).

5.8 Regarding claim 14, James does not expressly teach however Collins teaches, *further comprising: a messaging entity configured to provide messages for simulation to the controller module* (Col. 8 lines 61-67 and Col. 9 lines 1-15).

5.9 Regarding claim 16, James does not expressly teach however Collins teaches, *wherein the controller module further comprises: a real-time controller loop configured to the non real-time simulator; a traffic output module adapted to accept output messages from the non-real-time simulator; a traffic input module adapted to receive input messages from a messaging entity; and a packet queue configured to buffer input and output messages* (Figures 1-7 and more specifically, Col. 8 lines 61-67 and Col. 9 lines 1-15).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over James as modified by Collins as applied to claims 7-14 and 16 above, and further in view of Liu et al. (U.S. Patent 6,134,514).

James as modified by Collins teaches a mixed real-time and non-real-time simulator as recited in claims 7-14 and 16 for the reasons above, differing from the invention as recited in claims 7-14 and 16 in that their combined teaching lacks

(claim 15) wherein the messaging entity is a radio emulator.

Liu et al. teaches a real-time simulation environment for a cellular communications (radio) system (Col. 11 lines 66-67 and Col. 12 lines 1-6).

Liu et al. as modified by Collins and James are analogous art because they are all related to real-time simulation.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the real-time simulator of Liu et al. in the real-time/non-real-time simulators of Collins and James because, Liu et al. teaches, that use of the network simulation methodologies as disclosed result in networks with increased speed (see Col. 12 lines 13-67 of Liu et al.).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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